SEQUENCE LISTING

<110> Lee, Dong-Ki
Lee, Yangsoon
Kim, Jin-Soo

<120> DIFFERENTIATION PROTEINS

<130> 12279-007002

<140> US 10/669,861
<141> 2003-09-24

<150> US 10/314,669
<151> 2002-12-09

<150> US 60/338,441
<151> 2001-12-07

<150> US 60/376,053
<151> 2002-04-26

<150> US 60/400,904
<151> 2002-08-02

<150> US 60/401,089
<151> 2002-08-05

<160> 261

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1137
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1134)

<400> 1

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg ttt gag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Glu
            20                  25                  30

tgt aaa gat tgc ggg aaa gct ttc att cag aag tca aac ctc atc aga      144
Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu Ile Arg
        35                  40                  45
```

```
cac cag aga act cac acc ggg gaa aaa ccg tac aag tgt gaa gaa tgt      192
His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys
 50                  55                  60

ggc aaa gct ttt acc caa tcc tca aac ctt act aaa cat aag aaa att      240
Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu Thr Lys His Lys Lys Ile
 65                  70                  75                  80

cat acc ggg gaa aaa ccg tat aaa tgt aag caa tgt ggg aaa gct ttt      288
His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe
                85                  90                  95

gga tgt ccc tca aac ctt cga agg cat gga agg act cac acc ggt gaa      336
Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu
            100                 105                 110

aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac gat cgt cac cgg      384
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125

att gag gag aaa cgt aaa agg aca tat gag acc ttc aag agc atc atg      432
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140

aag aag agt cct ttc agc gga ccc acc gac ccc cgg cct cca cct cga      480
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160

cgc att gct gtg cct tcc cgc agc tca gct tct gtc ccc aag cca gca      528
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175

ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc atc aac tat gat      576
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190

gag ttt ccc acc atg gtg ttt cct tct ggg cag atc agc cag gcc tcg      624
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205

gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag gct cca gcc cct      672
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220

gcc cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct      720
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240

gtc cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc      768
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255

ccc aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg      816
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270

cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc      864
```

```
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285

aca gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag      912
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300

ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act      960
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320

gag ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca     1008
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335

gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg     1056
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350

ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc tcc tcc att gcg     1104
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365

gac atg gac ttc tca gcc ctg ctg agt cag taa                        1137
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375

<210> 2
<211> 378
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 2
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Glu
            20                  25                  30
Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu Ile Arg
        35                  40                  45
His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys
    50                  55                  60
Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu Thr Lys His Lys Lys Ile
65                  70                  75                  80
His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe
                85                  90                  95
Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu
            100                 105                 110
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
```

```
                165                 170                 175
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375
```

<210> 3
<211> 1233
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1230)

<400> 3

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat gta       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Val
             20                  25                  30

tgc gat gta gag gga tgt acg tgg aaa ttt gcc cgc tca gat aag ctc      144
Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Lys Leu
         35                  40                  45

aac aga cac aag aaa agg cac acc ggg gaa aaa ccg tat gag tgt cac      192
Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Glu Cys His
     50                  55                  60

gat tgc gga aag tcc ttt agg cag agc acc cac ctc act cgg cac cgg      240
```

```
Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu Thr Arg His Arg
 65                  70                  75                  80

agg atc cac acc ggg gaa aaa ccg tat gag tgt aat tac tgt gga aaa      288
Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys
                 85                  90                  95

acc ttt agt gtg agc tca acc ctt att aga cat cag aga atc cac acc      336
Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile His Thr
            100                 105                 110

ggg gaa aaa ccg tat gta tgc gat gta gag gga tgt acg tgg aaa ttt      384
Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe
        115                 120                 125

gcc cgc tca gat aag ctc aac aga cac aag aaa agg cac acc ggt gaa      432
Ala Arg Ser Asp Lys Leu Asn Arg His Lys Lys Arg His Thr Gly Glu
    130                 135                 140

aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac gat cgt cac cgg      480
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
145                 150                 155                 160

att gag gag aaa cgt aaa agg aca tat gag acc ttc aag agc atc atg      528
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
                165                 170                 175

aag aag agt cct ttc agc gga ccc acc gac ccc cgg cct cca cct cga      576
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
            180                 185                 190

cgc att gct gtg cct tcc cgc agc tca gct tct gtc ccc aag cca gca      624
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
        195                 200                 205

ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc atc aac tat gat      672
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
    210                 215                 220

gag ttt ccc acc atg gtg ttt cct tct ggg cag atc agc cag gcc tcg      720
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
225                 230                 235                 240

gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag gct cca gcc cct      768
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
                245                 250                 255

gcc cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct      816
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
            260                 265                 270

gtc cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc      864
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
        275                 280                 285

ccc aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg      912
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
```

```
    290                 295                 300

cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc      960
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
305                 310                 315                 320

aca gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag     1008
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
                325                 330                 335

ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act     1056
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
            340                 345                 350

gag ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca     1104
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
        355                 360                 365

gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg     1152
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
    370                 375                 380

ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc tcc tcc att gcg     1200
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
385                 390                 395                 400

gac atg gac ttc tca gcc ctg ctg agt cag taa                        1233
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
                405                 410
```

<210> 4
<211> 410
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 4

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Val
            20                  25                  30
Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Lys Leu
        35                  40                  45
Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Glu Cys His
    50                  55                  60
Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu Thr Arg His Arg
65                  70                  75                  80
Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys
                85                  90                  95
Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile His Thr
            100                 105                 110
Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe
        115                 120                 125
Ala Arg Ser Asp Lys Leu Asn Arg His Lys Lys Arg His Thr Gly Glu
    130                 135                 140
```

```
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
145                 150                 155                 160
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
                165                 170                 175
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
            180                 185                 190
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
        195                 200                 205
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
    210                 215                 220
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
225                 230                 235                 240
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
                245                 250                 255
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
            260                 265                 270
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
        275                 280                 285
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
    290                 295                 300
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
305                 310                 315                 320
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
                325                 330                 335
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
            340                 345                 350
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
        355                 360                 365
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
    370                 375                 380
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
385                 390                 395                 400
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
                405                 410
```

<210> 5
<211> 1137
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1134)

<400> 5

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat aag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Lys
            20                  25                  30

tgc atg gag tgt ggg aag gct ttt aac cgc agg tca cac ctc aca cgg      144
Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg
```

```
         35                  40                  45

cac cag cgg att cac acc ggg gaa aaa ccg ttc cag tgt aaa act tgt      192
His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys
     50                  55                  60

cag cga aag ttc tcc cgg tcc gac cac ctg aag acc cac acc agg act      240
Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
 65                  70                  75                  80

cat acc ggg gaa aaa ccg tat aca tgt aaa cag tgt ggg aaa gcc ttc      288
His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe
                85                  90                  95

agt gtt tcc agt tcc ctt cga aga cat gaa acc act cac acc ggt gaa      336
Ser Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu
            100                 105                 110

aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac gat cgt cac cgg      384
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125

att gag gag aaa cgt aaa agg aca tat gag acc ttc aag agc atc atg      432
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140

aag aag agt cct ttc agc gga ccc acc gac ccc cgg cct cca cct cga      480
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160

cgc att gct gtg cct tcc cgc agc tca gct tct gtc ccc aag cca gca      528
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175

ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc atc aac tat gat      576
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190

gag ttt ccc acc atg gtg ttt cct tct ggg cag atc agc cag gcc tcg      624
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205

gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag gct cca gcc cct      672
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220

gcc cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct      720
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240

gtc cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc      768
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255

ccc aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg      816
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270
```

```
cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc      864
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285

aca gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag      912
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300

ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act      960
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320

gag ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca     1008
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335

gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg     1056
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350

ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc tcc tcc att gcg     1104
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365

gac atg gac ttc tca gcc ctg ctg agt cag taa                        1137
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375
```

<210> 6
<211> 378
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 6

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Lys
            20                  25                  30
Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg
        35                  40                  45
His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys
    50                  55                  60
Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
65                  70                  75                  80
His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe
                85                  90                  95
Ser Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu
            100                 105                 110
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
```

```
145                 150                 155                 160
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375
```

<210> 7
<211> 1149
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1146)

<400> 7

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg ttt gag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Glu
            20                  25                  30

tgt aaa gat tgc ggg aaa gct ttc att cag aag tca aac ctc atc aga      144
Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu Ile Arg
        35                  40                  45

cac cag aga act cac acc ggg gaa aaa ccg tat gct tgc cct gtc gag      192
His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu
    50                  55                  60
```

```
tcc tgc gat cgc cgc ttt tct gat tcg tcg aac ctt acc cgc cat atc      240
Ser Cys Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg His Ile
 65                  70                  75                  80

cgc atc cac acc ggg gaa aaa ccg tat gct tgc cct gtc gag tcc tgc      288
Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu Ser Cys
                 85                  90                  95

gat cgc cgc ttt tct gat tcg tcg aac ctt acc cgc cat atc cgc atc      336
Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg His Ile Arg Ile
            100                 105                 110

cac acc ggt gaa aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac      384
His Thr Gly Glu Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp
        115                 120                 125

gat cgt cac cgg att gag gag aaa cgt aaa agg aca tat gag acc ttc      432
Asp Arg His Arg Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe
    130                 135                 140

aag agc atc atg aag aag agt cct ttc agc gga ccc acc gac ccc cgg      480
Lys Ser Ile Met Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg
145                 150                 155                 160

cct cca cct cga cgc att gct gtg cct tcc cgc agc tca gct tct gtc      528
Pro Pro Pro Arg Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val
                165                 170                 175

ccc aag cca gca ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc      576
Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr
            180                 185                 190

atc aac tat gat gag ttt ccc acc atg gtg ttt cct tct ggg cag atc      624
Ile Asn Tyr Asp Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile
        195                 200                 205

agc cag gcc tcg gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag      672
Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln
    210                 215                 220

gct cca gcc cct gcc cct gct cca gcc atg gta tca gct ctg gcc cag      720
Ala Pro Ala Pro Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln
225                 230                 235                 240

gcc cca gcc cct gtc cca gtc cta gcc cca ggc cct cct cag gct gtg      768
Ala Pro Ala Pro Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val
                245                 250                 255

gcc cca cct gcc ccc aag ccc acc cag gct ggg gaa gga acg ctg tca      816
Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser
            260                 265                 270

gag gcc ctg ctg cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg      864
Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu
        275                 280                 285
```

```
ctt ggc aac agc aca gac cca gct gtg ttc aca gac ctg gca tcc gtc      912
Leu Gly Asn Ser Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val
    290                 295                 300

gac aac tcc gag ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc      960
Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala
305                 310                 315                 320

ccc cac aca act gag ccc atg ctg atg gag tac cct gag gct ata act     1008
Pro His Thr Thr Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr
                325                 330                 335

cgc cta gtg aca gcc cag agg ccc ccc gac cca gct cct gct cca ctg     1056
Arg Leu Val Thr Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu
            340                 345                 350

ggg gcc ccg ggg ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc     1104
Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe
        355                 360                 365

tcc tcc att gcg gac atg gac ttc tca gcc ctg ctg agt cag             1146
Ser Ser Ile Ala Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375                 380

taa                                                                 1149

<210> 8
<211> 382
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 8
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Glu
            20                  25                  30
Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu Ile Arg
        35                  40                  45
His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu
    50                  55                  60
Ser Cys Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg His Ile
65                  70                  75                  80
Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu Ser Cys
                85                  90                  95
Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg His Ile Arg Ile
            100                 105                 110
His Thr Gly Glu Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp
        115                 120                 125
Asp Arg His Arg Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe
    130                 135                 140
Lys Ser Ile Met Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg
145                 150                 155                 160
Pro Pro Pro Arg Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val
                165                 170                 175
```

```
Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr
            180                 185                 190
Ile Asn Tyr Asp Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile
        195                 200                 205
Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln
    210                 215                 220
Ala Pro Ala Pro Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln
225                 230                 235                 240
Ala Pro Ala Pro Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val
                245                 250                 255
Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser
            260                 265                 270
Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu
        275                 280                 285
Leu Gly Asn Ser Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val
    290                 295                 300
Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala
305                 310                 315                 320
Pro His Thr Thr Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr
                325                 330                 335
Arg Leu Val Thr Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu
            340                 345                 350
Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe
        355                 360                 365
Ser Ser Ile Ala Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375                 380
```

<210> 9
<211> 630
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(627)

<400> 9

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat gag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
             20                  25                  30

tgt gat cac tgt gga aaa tcc ttt agc cag agc tct cat ctg aat gtg      144
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
         35                  40                  45

cac aaa aga act cac acc ggg gaa aaa ccg tac aga tgt gag gaa tgt      192
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys
     50                  55                  60

ggc aaa gcc ttt agg tgg ccc tca aac ctt act aga cat aag aga att      240
Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile
```

```
 65                  70                  75                  80

cac acc ggg gaa aaa ccg tac aga tgt gag gaa tgt ggc aaa gcc ttt      288
His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe
                 85                  90                  95

agg tgg ccc tca aac ctt act aga cat aag aga att cac acc ggg gaa      336
Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu
            100                 105                 110

aaa ccg ttt gcc tgc cct gag tgt cct aag cgc ttc atg aga tcc gac      384
Lys Pro Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp
        115                 120                 125

aac ctg acc cag cat atc aag acc cac acc ggt gaa aaa gcg gcc gct      432
Asn Leu Thr Gln His Ile Lys Thr His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140

aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg ctc ttt act cgg      480
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160

gac gag tgg aag aag ctg gat ctg tct cag aga agc ctg tac cgt gag      528
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175

gtg atg ctg gag aat tac agc aac ctg gcc tcc atg gca gga ttc ctg      576
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190

ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa gga gag gat ccc      624
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205

tgg taa                                                             630
Trp
```

<210> 10
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 10

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20                  25                  30
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35                  40                  45
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys
    50                  55                  60
Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile
65                  70                  75                  80
```

```
His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe
                85                  90                  95
Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu
            100                 105                 110
Lys Pro Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp
        115                 120                 125
Asn Leu Thr Gln His Ile Lys Thr His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205
Trp
```

<210> 11
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(639)

<400> 11

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa      48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tac tcc      96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Ser
            20                  25                  30

tgt ggc att tgt ggc aaa tcc ttc tct gac tcc agt gcc aaa agg aga     144
Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg
        35                  40                  45

cac tgc att cta cac acc ggg gaa aaa ccg tat gta tgc gat gta gag     192
His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu
    50                  55                  60

gga tgt acg tgg aaa ttt gcc cgc tca gat aag ctc aac aga cac aag     240
Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Lys Leu Asn Arg His Lys
65                  70                  75                  80

aaa agg cac acc ggg gaa aaa ccg tat gta tgc gat gta gag gga tgt     288
Lys Arg His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys
                85                  90                  95

acg tgg aaa ttt gcc cgc tca gat gag ctc aac aga cac aag aaa agg     336
Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg
```

```
            100                 105                 110

cac acc ggg gaa aaa ccg tat gag tgt cac gat tgc gga aag tcc ttt      384
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
        115                 120                 125

agg cag agc acc cac ctc act cgg cac cgg agg atc cac acc ggt gaa      432
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
    130                 135                 140

aaa gcg gcc gct aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg      480
Lys Ala Ala Ala Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val
145                 150                 155                 160

ctc ttt act cgg gac gag tgg aag aag ctg gat ctg tct cag aga agc      528
Leu Phe Thr Arg Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser
                165                 170                 175

ctg tac cgt gag gtg atg ctg gag aat tac agc aac ctg gcc tcc atg      576
Leu Tyr Arg Glu Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met
            180                 185                 190

gca gga ttc ctg ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa      624
Ala Gly Phe Leu Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln
        195                 200                 205

gga gag gat ccc tgg taa                                             642
Gly Glu Asp Pro Trp
    210

<210> 12
<211> 213
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 12
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Ser
            20                  25                  30
Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg
        35                  40                  45
His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu
    50                  55                  60
Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Lys Leu Asn Arg His Lys
65                  70                  75                  80
Lys Arg His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys
                85                  90                  95
Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg
            100                 105                 110
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
        115                 120                 125
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
    130                 135                 140
```

```
Lys Ala Ala Ala Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val
145                 150                 155                 160
Leu Phe Thr Arg Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser
                165                 170                 175
Leu Tyr Arg Glu Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met
            180                 185                 190
Ala Gly Phe Leu Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln
        195                 200                 205
Gly Glu Asp Pro Trp
    210
```

<210> 13
<211> 630
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(627)

<400> 13

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat gag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
             20                  25                  30

tgt gat cac tgt gga aaa tcc ttt agc cag agc tct cat ctg aat gtg      144
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
         35                  40                  45

cac aaa aga act cac acc ggg gaa aaa ccg tac atg tgc agt gag tgt      192
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Met Cys Ser Glu Cys
     50                  55                  60

ggg cga ggc ttc agc cag aag tca aac ctc atc ata cac cag agg aca      240
Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu Ile Ile His Gln Arg Thr
 65                  70                  75                  80

cac acc ggg gaa aaa ccg tat gag tgt cac gat tgc gga aag tcc ttt      288
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
                 85                  90                  95

agg cag agc acc cac ctc act cgg cac cgg agg atc cac acc ggg gaa      336
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
            100                 105                 110

aaa ccg tat aaa tgt aag caa tgt ggg aaa gct ttt gga tgt ccc tca      384
Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser
        115                 120                 125

aac ctt cga agg cat gga agg act cac acc ggt gaa aaa gcg gcc gct      432
Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Ala Ala Ala
```

```
    130                 135                 140

aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg ctc ttt act cgg      480
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160

gac gag tgg aag aag ctg gat ctg tct cag aga agc ctg tac cgt gag      528
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175

gtg atg ctg gag aat tac agc aac ctg gcc tcc atg gca gga ttc ctg      576
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190

ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa gga gag gat ccc      624
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205

tgg taa                                                             630
Trp
```

<210> 14
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 14

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20                  25                  30
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35                  40                  45
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Met Cys Ser Glu Cys
    50                  55                  60
Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu Ile Ile His Gln Arg Thr
65                  70                  75                  80
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
                85                  90                  95
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
            100                 105                 110
Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser
        115                 120                 125
Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205
```

Trp

<210> 15
<211> 630
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(627)

<400> 15

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat gag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20                  25                  30

tgt gat cac tgt gga aaa tcc ttt agc cag agc tct cat ctg aat gtg      144
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35                  40                  45

cac aaa aga act cac acc ggg gaa aaa ccg tat gag tgt aat tac tgt      192
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys
    50                  55                  60

gga aaa acc ttt agt gtg agc tca acc ctt att aga cat cag aga atc      240
Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile
65                  70                  75                  80

cac acc ggg gaa aaa ccg ttt gcc tgc cct gag tgt cct aag cgc ttc      288
His Thr Gly Glu Lys Pro Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe
                85                  90                  95

atg aga tcc gac aac ctg acc cag cat atc aag acc cac acc ggg gaa      336
Met Arg Ser Asp Asn Leu Thr Gln His Ile Lys Thr His Thr Gly Glu
            100                 105                 110

aaa ccg tat gag tgt cac gat tgc gga aag tcc ttt agg cag agc acc      384
Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr
        115                 120                 125

cac ctc act cgg cac cgg agg atc cac acc ggt gaa aaa gcg gcc gct      432
His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140

aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg ctc ttt act cgg      480
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160

gac gag tgg aag aag ctg gat ctg tct cag aga agc ctg tac cgt gag      528
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
```

```
                165                 170                 175

gtg atg ctg gag aat tac agc aac ctg gcc tcc atg gca gga ttc ctg      576
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190

ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa gga gag gat ccc      624
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205

tgg taa                                                             630
Trp
```

<210> 16
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 16

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20                  25                  30
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35                  40                  45
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys
    50                  55                  60
Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile
65                  70                  75                  80
His Thr Gly Glu Lys Pro Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe
                85                  90                  95
Met Arg Ser Asp Asn Leu Thr Gln His Ile Lys Thr His Thr Gly Glu
            100                 105                 110
Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr
        115                 120                 125
His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205
Trp
```

<210> 17
<211> 1137
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1134)

<400> 17

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg ttc cag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln
            20                  25                  30

tgt aaa act tgt cag cga aag ttc tcc cgg tcc gac cac ctg aag acc      144
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
        35                  40                  45

cac acc agg act cat acc ggg gaa aaa ccg tat aag tgc atg gag tgt      192
His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys
    50                  55                  60

ggg aag gct ttt aac cgc agg tca cac ctc aca cgg cac cag cgg att      240
Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile
65                  70                  75                  80

cac acc ggg gaa aaa ccg tat aaa tgc ggc cag tgt ggg aag ttc tac      288
His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr
                85                  90                  95

tcg cag gtc tcc cac ctc acc cgc cac cag aaa atc cac acc ggt gaa      336
Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr Gly Glu
            100                 105                 110

aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac gat cgt cac cgg      384
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125

att gag gag aaa cgt aaa agg aca tat gag acc ttc aag agc atc atg      432
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140

aag aag agt cct ttc agc gga ccc acc gac ccc cgg cct cca cct cga      480
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160

cgc att gct gtg cct tcc cgc agc tca gct tct gtc ccc aag cca gca      528
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175

ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc atc aac tat gat      576
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190

gag ttt ccc acc atg gtg ttt cct tct ggg cag atc agc cag gcc tcg      624
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
```

```
        195                 200                 205

gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag gct cca gcc cct      672
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220

gcc cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct      720
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240

gtc cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc      768
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255

ccc aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg      816
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270

cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc      864
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285

aca gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag      912
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300

ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act      960
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320

gag ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca     1008
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335

gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg     1056
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350

ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc tcc tcc att gcg     1104
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365

gac atg gac ttc tca gcc ctg ctg agt cag taa                        1137
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375
```

<210> 18
<211> 378
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 18

```
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
```

```
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln
            20                  25                  30
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
        35                  40                  45
His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys
    50                  55                  60
Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile
65                  70                  75                  80
His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr
                85                  90                  95
Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr Gly Glu
            100                 105                 110
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375
```

<210> 19
<211> 1137
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(1134)

<400> 19

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tac aaa       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Lys
            20                  25                  30

tgt gaa gaa tgt ggc aaa gcc ttt agg cag tcc tca cac ctt act aca      144
Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr
        35                  40                  45

cat aag ata att cat acc ggg gaa aaa ccg tat aag tgc atg gag tgt      192
His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys
    50                  55                  60

ggg aag gct ttt aac cgc agg tca cac ctc aca cgg cac cag cgg att      240
Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile
65                  70                  75                  80

cac acc ggg gaa aaa ccg ttc cag tgt aaa act tgt cag cga aag ttc      288
His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
                85                  90                  95

tcc cgg tcc gac cac ctg aag acc cac acc agg act cat acc ggt gaa      336
Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
            100                 105                 110

aaa gcg gcc gct aaa ttc tac ctg cca gat aca gac gat cgt cac cgg      384
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125

att gag gag aaa cgt aaa agg aca tat gag acc ttc aag agc atc atg      432
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140

aag aag agt cct ttc agc gga ccc acc gac ccc cgg cct cca cct cga      480
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160

cgc att gct gtg cct tcc cgc agc tca gct tct gtc ccc aag cca gca      528
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175

ccc cag ccc tat ccc ttt acg tca tcc ctg agc acc atc aac tat gat      576
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190

gag ttt ccc acc atg gtg ttt cct tct ggg cag atc agc cag gcc tcg      624
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205

gcc ttg gcc ccg gcc cct ccc caa gtc ctg ccc cag gct cca gcc cct      672
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220
```

```
gcc cct gct cca gcc atg gta tca gct ctg gcc cag gcc cca gcc cct      720
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240

gtc cca gtc cta gcc cca ggc cct cct cag gct gtg gcc cca cct gcc      768
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255

ccc aag ccc acc cag gct ggg gaa gga acg ctg tca gag gcc ctg ctg      816
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270

cag ctg cag ttt gat gat gaa gac ctg ggg gcc ttg ctt ggc aac agc      864
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285

aca gac cca gct gtg ttc aca gac ctg gca tcc gtc gac aac tcc gag      912
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300

ttt cag cag ctg ctg aac cag ggc ata cct gtg gcc ccc cac aca act      960
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320

gag ccc atg ctg atg gag tac cct gag gct ata act cgc cta gtg aca     1008
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335

gcc cag agg ccc ccc gac cca gct cct gct cca ctg ggg gcc ccg ggg     1056
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350

ctc ccc aat ggc ctc ctt tca gga gat gaa gac ttc tcc tcc att gcg     1104
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365

gac atg gac ttc tca gcc ctg ctg agt cag taa                        1137
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375

<210> 20
<211> 378
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 20
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Lys
            20                  25                  30
Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr
        35                  40                  45
His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys
```

```
    50                  55                  60
Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile
65                  70                  75                  80
His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
                85                  90                  95
Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
            100                 105                 110
Lys Ala Ala Ala Lys Phe Tyr Leu Pro Asp Thr Asp Asp Arg His Arg
        115                 120                 125
Ile Glu Glu Lys Arg Lys Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met
    130                 135                 140
Lys Lys Ser Pro Phe Ser Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg
145                 150                 155                 160
Arg Ile Ala Val Pro Ser Arg Ser Ser Ala Ser Val Pro Lys Pro Ala
                165                 170                 175
Pro Gln Pro Tyr Pro Phe Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp
            180                 185                 190
Glu Phe Pro Thr Met Val Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser
        195                 200                 205
Ala Leu Ala Pro Ala Pro Pro Gln Val Leu Pro Gln Ala Pro Ala Pro
    210                 215                 220
Ala Pro Ala Pro Ala Met Val Ser Ala Leu Ala Gln Ala Pro Ala Pro
225                 230                 235                 240
Val Pro Val Leu Ala Pro Gly Pro Pro Gln Ala Val Ala Pro Pro Ala
                245                 250                 255
Pro Lys Pro Thr Gln Ala Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu
            260                 265                 270
Gln Leu Gln Phe Asp Asp Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser
        275                 280                 285
Thr Asp Pro Ala Val Phe Thr Asp Leu Ala Ser Val Asp Asn Ser Glu
    290                 295                 300
Phe Gln Gln Leu Leu Asn Gln Gly Ile Pro Val Ala Pro His Thr Thr
305                 310                 315                 320
Glu Pro Met Leu Met Glu Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr
                325                 330                 335
Ala Gln Arg Pro Pro Asp Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly
            340                 345                 350
Leu Pro Asn Gly Leu Leu Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala
        355                 360                 365
Asp Met Asp Phe Ser Ala Leu Leu Ser Gln
    370                 375

<210> 21
<211> 83
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 21
Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu
 1               5                  10                  15
Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ala Cys Pro
            20                  25                  30
Val Glu Ser Cys Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg
        35                  40                  45
```

```
His Ile Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu
    50                  55                  60
Ser Cys Asp Arg Arg Phe Ser Asp Ser Ser Asn Leu Thr Arg His Ile
65                  70                  75                  80
Arg Ile His
```

<210> 22
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 22

```
Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg
 1               5                  10                  15
Arg His Cys Ile Leu His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val
            20                  25                  30
Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp Lys Leu Asn Arg His
        35                  40                  45
Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly
    50                  55                  60
Cys Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys
65                  70                  75                  80
Arg His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser
                85                  90                  95
Phe Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His
            100                 105                 110
```

<210> 23
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 23

```
Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
 1               5                  10                  15
Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu
            20                  25                  30
Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys
        35                  40                  45
Arg Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys
    50                  55                  60
Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr
65                  70                  75                  80
Gly Glu Lys Pro Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg
                85                  90                  95
Ser Asp Asn Leu Thr Gln His Ile Lys Thr His
            100                 105
```

<210> 24
<211> 26

<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 24
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 25
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 25
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 26
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 26
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 27
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 27
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Ala
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 28
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 28
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 29
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 29
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Glu
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 30
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 30
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Thr His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 31
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 31
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1   5   10   15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 32
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 32
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 33
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 33
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 34
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(26)
<223> Xaa = any amino acid

<400> 34
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Asn
 1   5   10   15
Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 35
<211> 96
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(96)
<223> Xaa = any amino acid

<400> 35
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa Xaa Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
        35   40   45
Xaa Xaa Xaa Xaa Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
65   70   75   80
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85   90   95

<210> 36
<211> 94
<212> PRT
<213> Artificial Sequence

<220>

<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 36
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Ser Asn Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Cys Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85   90

<210> 37
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 37
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Ser Asn Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 38
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 38
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15

```
Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa
        35                  40                  45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50                  55                  60

<210> 39
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 39
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Val Xaa Ser Thr Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85                  90                  95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100                 105                 110
Xaa Xaa Arg Xaa Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115                 120                 125

<210> 40
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 40
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
```

```
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Val Xaa Ser Thr Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 41
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 41

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Thr His
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Val Xaa
        35                  40                  45
Ser Thr Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Arg Xaa Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 42
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 42

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50                  55                  60
```

<210> 43
<211> 60
<212> PRT

<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 43
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Val Xaa Ser Thr
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 44
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 44
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Ser His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Asp His Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Val Xaa Ser Ser Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85   90

<210> 45
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 45
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Ser His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Asp His Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 46
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 46
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp His
 1   5   10   15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Val Xaa
        35   40   45
Ser Ser Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 47
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 47
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa
        35   40   45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Asp Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85   90

<210> 48
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 48
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa
        35   40   45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 49
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 49
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa
        35   40   45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 50
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 50
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
1 5 10 15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa
35 40 45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
50 55 60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65 70 75 80
Trp Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
85 90 95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
100 105 110
Xaa Xaa Arg Xaa Asp Asn Xaa Xaa Gln His Xaa Xaa Xaa Xaa Xaa His
115 120 125

<210> 51
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 51
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa Ser Asn
1 5 10 15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa
35 40 45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
50 55 60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65 70 75 80
Arg Xaa Asp Asn Xaa Xaa Gln His Xaa Xaa Xaa Xaa Xaa His
85 90

<210> 52
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 52

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1               5                  10                  15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Trp Xaa
        35                  40                  45
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Trp Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 53
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 53

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Ala
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35                  40                  45
Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Arg Xaa Asp Glu Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85                  90                  95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100                 105                 110
Xaa Xaa Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115                 120                 125
```

<210> 54
<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(93)
<223> Xaa = any amino acid

<400> 54

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
```

```
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35                  40                  45
Asp Glu Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa
                85                  90
```

<210> 55
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 55

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Asp Xaa Ser Ala
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35                  40                  45
Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Arg Xaa Asp Glu Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 56
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 56

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp His
 1               5                  10                  15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
```

```
Ser Asn Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85                  90                  95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100                 105                 110
Xaa Xaa Gln Xaa Phe Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115                 120                 125

<210> 57
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 57
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp His
 1               5                  10                  15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Ser Asn Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90

<210> 58
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 58
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1               5                  10                  15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
```

```
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Gln Xaa Phe Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 59
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 59

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1               5                  10                  15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Ser Ser Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50                  55                  60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65                  70                  75                  80
Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85                  90
```

<210> 60
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 60

```
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Ser
 1               5                  10                  15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35                  40                  45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50                  55                  60
```

<210> 61
<211> 60
<212> PRT

<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 61
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1   5   10   15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Ser Ser Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 62
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 62
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1   5   10   15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Ser Asn Xaa Xaa Ile His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85   90   95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100   105   110
Xaa Xaa Cys Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115   120   125

<210> 63
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(128)
<223> Xaa = any amino acid

<400> 63
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1   5   10   15
Xaa Xaa Val His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Val Xaa
        35   40   45
Ser Thr Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Arg Xaa Asp Asn Xaa Xaa Gln His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85   90   95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100   105   110
Xaa Xaa Gln Xaa Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115   120   125

<210> 64
<211> 181
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 64
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1   5   10   15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20   25   30
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35   40   45
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys
    50   55   60
Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr
65   70   75   80
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
                85   90   95
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
            100   105   110
Lys Ala Ala Ala Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val
        115   120   125
Leu Phe Thr Arg Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser
    130   135   140
Leu Tyr Arg Glu Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met
145   150   155   160
Ala Gly Phe Leu Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln
                165   170   175
Gly Glu Asp Pro Trp
            180

<210> 65
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 65
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp His
 1   5   10   15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Gln Xaa Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
                85   90

<210> 66
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 66
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Ser His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 67
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 67
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp His
 1   5   10   15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
    50   55   60

<210> 68
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(94)
<223> Xaa = any amino acid

<400> 68
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
 1   5   10   15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
        35   40   45
Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Arg Xaa Asp His Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His
                85   90

<210> 69
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 69
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Ser His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30

Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
35 40 45
Asp His Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His
50 55 60

<210> 70
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> (1)...(60)
<223> Xaa = any amino acid

<400> 70
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser His
1 5 10 15
Xaa Xaa Thr His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa
35 40 45
Ser His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
50 55 60

<210> 71
<211> 89
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 71
Glu Arg Pro Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser
1 5 10 15
Arg Ser Asp Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys
20 25 30
Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His
35 40 45
Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys
50 55 60
Asp Ile Cys Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His
65 70 75 80
Thr Lys Ile His Leu Arg Gln Lys Asp
85

<210> 72
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> coordinating residue

<221> VARIANT
<222> 1, 13
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 19
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2, 4-8, 10-12, 14-18, 20-21, 23-27
<223> Xaa = any amino acid

<400> 72
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 73
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 1, 13
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 19
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2, 4-8, 10-12, 14, 16, 20, 23-27
<223> Xaa = any amino acid

<400> 73
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa
 1   5   10   15
Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 74
<211> 6
<212> PRT
<213> Eukaryote

<220>
<221> VARIANT
<222> 3
<223> Xaa = Glu or Gln

<221> VARIANT
<222> 4
<223> Xaa = Lys or Arg

<221> VARIANT
<222> 6
<223> Xaa = Tyr or Phe

<400> 74
Thr Gly Xaa Xaa Pro Xaa
 1   5

<210> 75
<211> 23
<212> PRT
<213> Homo sapiens

<400> 75
Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
 1   5   10   15
Arg Arg His Gly Arg Thr His
            20

<210> 76
<211> 23
<212> PRT
<213> Homo sapiens

<400> 76
Tyr Gln Cys Asn Ile Cys Gly Lys Cys Phe Ser Cys Asn Ser Asn Leu
 1   5   10   15
His Arg His Gln Arg Thr His
            20

<210> 77
<211> 23
<212> PRT
<213> Homo sapiens

<400> 77
Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys
 1   5   10   15
Arg Arg His Cys Ile Leu His
            20

<210> 78
<211> 23
<212> PRT
<213> Homo sapiens

<400> 78
Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu
 1   5   10   15
Asn Arg His Arg Arg Thr His
            20

<210> 79
<211> 23
<212> PRT
<213> Homo sapiens

<400> 79
Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe Asn His Ser Ser Asn Phe
1 5 10 15
Asn Lys His His Arg Ile His
20

<210> 80
<211> 23
<212> PRT
<213> Homo sapiens

<400> 80
Phe Lys Cys Pro Val Cys Gly Lys Ala Phe Arg His Ser Ser Ser Leu
1 5 10 15
Val Arg His Gln Arg Thr His
20

<210> 81
<211> 24
<212> PRT
<213> Homo sapiens

<400> 81
Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Ile Ser Ser Asn Leu
1 5 10 15
Gln Arg His Val Arg Asn Ile His
20

<210> 82
<211> 23
<212> PRT
<213> Homo sapiens

<400> 82
Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Ile Gly Ser Asn Leu
1 5 10 15
Asn Val His Arg Arg Ile His
20

<210> 83
<211> 23
<212> PRT
<213> Homo sapiens

<400> 83
Tyr Gly Cys His Leu Cys Gly Lys Ala Phe Ser Lys Ser Ser Asn Leu
1 5 10 15
Arg Arg His Glu Met Ile His
20

<210> 84
<211> 23
<212> PRT
<213> Homo sapiens

<400> 84

Tyr Lys Cys Lys Glu Cys Gly Gln Ala Phe Arg Gln Arg Ala His Leu
1 5 10 15
Ile Arg His His Lys Leu His
20

<210> 85
<211> 23
<212> PRT
<213> Homo sapiens

<400> 85
Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe Asn Leu
1 5 10 15
Arg Arg His Glu Arg Thr His
20

<210> 86
<211> 23
<212> PRT
<213> Homo sapiens

<400> 86
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
1 5 10 15
Leu Arg His Ile Lys Leu His
20

<210> 87
<211> 23
<212> PRT
<213> Homo sapiens

<400> 87
Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Ser Ser His Leu
1 5 10 15
Arg Arg His Glu Lys Thr His
20

<210> 88
<211> 23
<212> PRT
<213> Homo sapiens

<400> 88
Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu
1 5 10 15
Thr Arg His Gln Lys Ile His
20

<210> 89
<211> 23
<212> PRT
<213> Homo sapiens

<400> 89
Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Cys Ser His Leu
1 5 10 15

Arg Arg His Glu Lys Thr His
20

<210> 90
<211> 23
<212> PRT
<213> Homo sapiens

<400> 90
Tyr Ala Cys His Leu Cys Ala Lys Ala Phe Ile Gln Cys Ser His Leu
1 5 10 15
Arg Arg His Glu Lys Thr His
20

<210> 91
<211> 23
<212> PRT
<213> Homo sapiens

<400> 91
Tyr Val Cys Arg Glu Cys Gly Arg Gly Phe Arg Gln His Ser His Leu
1 5 10 15
Val Arg His Lys Arg Thr His
20

<210> 92
<211> 23
<212> PRT
<213> Homo sapiens

<400> 92
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15
Thr Thr His Lys Ile Ile His
20

<210> 93
<211> 23
<212> PRT
<213> Homo sapiens

<400> 93
Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
1 5 10 15
Asn Val His Lys Arg Thr His
20

<210> 94
<211> 23
<212> PRT
<213> Homo sapiens

<400> 94
Tyr Met Cys Ser Glu Cys Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15
Ile Ile His Gln Arg Thr His
20

<210> 95
<211> 23
<212> PRT
<213> Homo sapiens

<400> 95
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
1 5 10 15
Thr Lys His Lys Lys Ile His
20

<210> 96
<211> 23
<212> PRT
<213> Homo sapiens

<400> 96
Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 97
<211> 23
<212> PRT
<213> Homo sapiens

<400> 97
Tyr Val Cys Arg Glu Cys Arg Arg Gly Phe Ser Gln Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 98
<211> 23
<212> PRT
<213> Homo sapiens

<400> 98
Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu
1 5 10 15
Thr Arg His Lys Lys Ser His
20

<210> 99
<211> 23
<212> PRT
<213> Homo sapiens

<400> 99
Tyr Glu Cys Asn Thr Cys Arg Lys Thr Phe Ser Gln Lys Ser Asn Leu
1 5 10 15
Ile Val His Gln Arg Thr His
20

<210> 100

<211> 23
<212> PRT
<213> Homo sapiens

<400> 100
Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
 1   5   10   15
Thr Val His Gln Lys Ile His
            20

<210> 101
<211> 23
<212> PRT
<213> Homo sapiens

<400> 101
Tyr Lys Cys Asp Glu Cys Gly Lys Asn Phe Thr Gln Ser Ser Asn Leu
 1   5   10   15
Ile Val His Lys Arg Ile His
            20

<210> 102
<211> 23
<212> PRT
<213> Homo sapiens

<400> 102
Tyr Glu Cys Asp Val Cys Gly Lys Thr Phe Thr Gln Lys Ser Asn Leu
 1   5   10   15
Gly Val His Gln Arg Thr His
            20

<210> 103
<211> 23
<212> PRT
<213> Homo sapiens

<400> 103
Tyr Glu Cys Val Gln Cys Gly Lys Gly Phe Thr Gln Ser Ser Asn Leu
 1   5   10   15
Ile Thr His Gln Arg Val His
            20

<210> 104
<211> 23
<212> PRT
<213> Homo sapiens

<400> 104
Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu
 1   5   10   15
Ile Arg His Gln Arg Thr His
            20

<210> 105
<211> 23
<212> PRT

<213> Homo sapiens

<400> 105
Tyr Glu Cys Gln Asp Cys Gly Arg Ala Phe Asn Gln Asn Ser Ser Leu
1 5 10 15
Gly Arg His Lys Arg Thr His
20

<210> 106
<211> 23
<212> PRT
<213> Homo sapiens

<400> 106
Tyr Glu Cys Asn Glu Cys Gly Lys Phe Phe Ser Gln Ser Ser Ser Leu
1 5 10 15
Ile Arg His Arg Arg Ser His
20

<210> 107
<211> 23
<212> PRT
<213> Homo sapiens

<400> 107
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu
1 5 10 15
Thr Arg His Lys Ile Val His
20

<210> 108
<211> 23
<212> PRT
<213> Homo sapiens

<400> 108
Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe Ala Gln Asn Ser Thr Leu
1 5 10 15
Arg Val His Gln Arg Ile His
20

<210> 109
<211> 23
<212> PRT
<213> Homo sapiens

<400> 109
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15
Thr Gln His Arg Arg Ile His
20

<210> 110
<211> 23
<212> PRT
<213> Homo sapiens

<400> 110
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15
Thr Arg His Arg Arg Ile His
20

<210> 111
<211> 22
<212> PRT
<213> Homo sapiens

<400> 111
His Lys Cys Leu Glu Cys Gly Lys Cys Phe Ser Gln Asn Thr His Leu
1 5 10 15
Thr Arg His Gln Arg Thr
20

<210> 112
<211> 25
<212> PRT
<213> Homo sapiens

<400> 112
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15
Glu Leu Asn Arg His Lys Lys Arg His
20 25

<210> 113
<211> 25
<212> PRT
<213> Homo sapiens

<400> 113
Tyr His Cys Asp Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp
1 5 10 15
Glu Leu Thr Arg His Tyr Arg Lys His
20 25

<210> 114
<211> 25
<212> PRT
<213> Homo sapiens

<400> 114
Tyr Arg Cys Ser Trp Glu Gly Cys Glu Trp Arg Phe Ala Arg Ser Asp
1 5 10 15
Glu Leu Thr Arg His Phe Arg Lys His
20 25

<210> 115
<211> 25
<212> PRT
<213> Homo sapiens

<400> 115
Phe Ser Cys Ser Trp Lys Gly Cys Glu Arg Arg Phe Ala Arg Ser Asp

```
 1               5                   10                  15
Glu Leu Ser Arg His Arg Arg Thr His
            20                  25
```

<210> 116
<211> 25
<212> PRT
<213> Homo sapiens

<400> 116

```
Phe Ala Cys Ser Trp Gln Asp Cys Asn Lys Lys Phe Ala Arg Ser Asp
 1               5                   10                  15
Glu Leu Ala Arg His Tyr Arg Thr His
            20                  25
```

<210> 117
<211> 25
<212> PRT
<213> Homo sapiens

<400> 117

```
Tyr His Cys Asn Trp Asp Gly Cys Gly Trp Lys Phe Ala Arg Ser Asp
 1               5                   10                  15
Glu Leu Thr Arg His Tyr Arg Lys His
            20                  25
```

<210> 118
<211> 24
<212> PRT
<213> Homo sapiens

<400> 118

```
Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu
 1               5                   10                  15
Thr Arg His Met Lys Lys Ser His
            20
```

<210> 119
<211> 23
<212> PRT
<213> Homo sapiens

<400> 119

```
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
 1               5                   10                  15
Lys Thr His Thr Arg Thr His
            20
```

<210> 120
<211> 23
<212> PRT
<213> Homo sapiens

<400> 120

```
Phe Ala Cys Glu Val Cys Gly Val Arg Phe Thr Arg Asn Asp Lys Leu
 1               5                   10                  15
Lys Ile His Met Arg Lys His
```

20

<210> 121
<211> 25
<212> PRT
<213> Homo sapiens

<400> 121
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15
Lys Leu Asn Arg His Lys Lys Arg His
20 25

<210> 122
<211> 23
<212> PRT
<213> Homo sapiens

<400> 122
Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15
Thr Arg His Gln Arg Ile His
20

<210> 123
<211> 23
<212> PRT
<213> Homo sapiens

<400> 123
Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 124
<211> 23
<212> PRT
<213> Homo sapiens

<400> 124
Tyr Leu Cys Ser Glu Cys Asp Lys Cys Phe Ser Arg Ser Thr Asn Leu
1 5 10 15
Ile Arg His Arg Arg Thr His
20

<210> 125
<211> 23
<212> PRT
<213> Homo sapiens

<400> 125
Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ser Ser Gly Ser Asn Phe
1 5 10 15
Thr Arg His Gln Arg Ile His
20

<210> 126
<211> 23
<212> PRT
<213> Homo sapiens

<400> 126
Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu
1 5 10 15
Asn Val His Arg Arg Ile His
20

<210> 127
<211> 23
<212> PRT
<213> Homo sapiens

<400> 127
Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1 5 10 15
Arg Arg His Glu Thr Thr His
20

<210> 128
<211> 23
<212> PRT
<213> Homo sapiens

<400> 128
Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15
Ile Arg His Gln Arg Ile His
20

<210> 129
<211> 23
<212> PRT
<213> Homo sapiens

<400> 129
Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu
1 5 10 15
Thr Arg His Lys Arg Ile His
20

<210> 130
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> target site

<400> 130
gaagaggacc 10

<210> 131
<211> 260

<212> PRT
<213> Homo sapiens

<400> 131
Tyr Leu Pro Asp Thr Asp Asp Arg His Arg Ile Glu Glu Lys Arg Lys
 1   5   10   15
Arg Thr Tyr Glu Thr Phe Lys Ser Ile Met Lys Lys Ser Pro Phe Ser
            20   25   30
Gly Pro Thr Asp Pro Arg Pro Pro Pro Arg Arg Ile Ala Val Pro Ser
        35   40   45
Arg Ser Ser Ala Ser Val Pro Lys Pro Ala Pro Gln Pro Tyr Pro Phe
    50   55   60
Thr Ser Ser Leu Ser Thr Ile Asn Tyr Asp Glu Phe Pro Thr Met Val
65   70   75   80
Phe Pro Ser Gly Gln Ile Ser Gln Ala Ser Ala Leu Ala Pro Ala Pro
                85   90   95
Pro Gln Val Leu Pro Gln Ala Pro Ala Pro Ala Pro Ala Pro Ala Met
            100   105   110
Val Ser Ala Leu Ala Gln Ala Pro Ala Pro Val Pro Val Leu Ala Pro
        115   120   125
Gly Pro Pro Gln Ala Val Ala Pro Pro Ala Pro Lys Pro Thr Gln Ala
    130   135   140
Gly Glu Gly Thr Leu Ser Glu Ala Leu Leu Gln Leu Gln Phe Asp Asp
145   150   155   160
Glu Asp Leu Gly Ala Leu Leu Gly Asn Ser Thr Asp Pro Ala Val Phe
                165   170   175
Thr Asp Leu Ala Ser Val Asp Asn Ser Glu Phe Gln Gln Leu Leu Asn
            180   185   190
Gln Gly Ile Pro Val Ala Pro His Thr Thr Glu Pro Met Leu Met Glu
        195   200   205
Tyr Pro Glu Ala Ile Thr Arg Leu Val Thr Ala Gln Arg Pro Pro Asp
    210   215   220
Pro Ala Pro Ala Pro Leu Gly Ala Pro Gly Leu Pro Asn Gly Leu Leu
225   230   235   240
Ser Gly Asp Glu Asp Phe Ser Ser Ile Ala Asp Met Asp Phe Ser Ala
                245   250   255
Leu Leu Ser Gln
            260

<210> 132
<211> 127
<212> PRT
<213> Saccharomyces cerevisiae

<400> 132
Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu Ser Phe Thr
 1   5   10   15
Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr Gln Thr Asn
            20   25   30
Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val His Asp Asn
        35   40   45
Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn
    50   55   60
Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala
65   70   75   80
Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met Asp Asp Val
                85   90   95

```
Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys
            100                 105                 110
Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser
        115                 120                 125

<210> 133
<211> 90
<212> PRT
<213> Saccharomyces cerevisiae

<400> 133
Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp Leu Gly Thr Ala
 1               5                  10                  15
Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr Arg Thr His Asp
            20                  25                  30
Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr Asn Ala Leu Gly
        35                  40                  45
Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro Ser Lys Gly Val
    50                  55                  60
Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu Gln Gln Pro Ile
65                  70                  75                  80
Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
                85                  90

<210> 134
<211> 63
<212> PRT
<213> Homo sapiens

<400> 134
Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu
 1               5                  10                  15
Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met
            20                  25                  30
Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr
        35                  40                  45
Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp
    50                  55                  60

<210> 135
<211> 207
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 135
taatacgact cactataggg aatattaagc taagctcacc atgggtaagc ctatccctaa      60
ccctctcctc ggtctcgatt ctacacaagc tatgggtgct cctccaaaaa agaagagaaa     120
ggtagctgga tccactagta acggccgcca gtgtgctgga attctgcaga tatccatcac     180
actggcggcg ctcgaggcat gcatcta                                         207

<210> 136
<211> 30
<212> DNA
<213> Artificial Sequence
```

<220>
<223> primer

<400> 136
cgatctgcag ggtccttttc atcacgtgct 30

<210> 137
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 137
cgatcgatgc cggcggacgg atcgcttgcc t 31

<210> 138
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 138
aattccatgg gtaagcctat ccctaacc 28

<210> 139
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 139
aattggatcc agctaccttt ctcttctt 28

<210> 140
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 140
aaggaaggaa ggaagcggcc gcagccaatt ttaatcaaag tgg 43

<210> 141
<211> 32
<212> DNA
<213> Artificial Sequence

<220>

<223> primer

<400> 141
acatacatgc atgcgccgtt actagtggat cc 32

<210> 142
<211> 474
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 142
ggccgccagt gtgctggaat tctgcagata tccatcacac tggcggccgc agccaatttt 60
aatcaaagtg ggaatattgc tgatagctca ttgtccttca ctttcactaa cagtagcaac 120
ggtccgaacc tcataacaac tcaaacaaat tctcaagcgc tttcacaacc aattgcctcc 180
tctaacgttc atgataactt catgaataat gaaatcacgg ctagtaaaat tgatgatggt 240
aataattcaa aaccactgtc acctggttgg acggaccaaa ctgcgtataa cgcgtttgga 300
atcactacag ggatgtttaa taccactaca atggatgatg tatataacta tctattcgat 360
gatgaagata ccccaccaaa cccaaaaaaa gagatctcta tggcttaccc atacgatgtt 420
ccagattacg ctagctaagg atccactagt aacggcgcat gcatctagag ggcc 474

<210> 143
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 143
aaggaaggaa ggaagcggcc gcaaattctg catcttcatc tacc 44

<210> 144
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 144
acatacatgc atgctgtaga attgttgctt tcg 33

<210> 145
<211> 330
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 145
ggccgccagt gtgctggaat tctgcagata tccatcacac tggcggccgc aaattctgca 60
tcttcatcta ccaaactaga cgacgacttg ggtacagcag cagcagtgct atcaaacatg 120
agatcatccc catatagaac tcatgataaa cccatttcca atgtcaatga catgaataac 180

acaaatgcgc tcggtgtgcc ggctagtagg cctcattcgt catcttttcc atcaaagggt 240
gtcttaagac caattctgtt acgtatccat aattccgaac aacaacccat tttcgaaagc 300
aacaattcta cagcatgcat ctagagggcc 330

<210> 146
<211> 25
<212> PRT
<213> Homo sapiens

<400> 146
Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg Phe Thr Asp Arg Ser
1 5 10 15
Ala Leu Ala Arg His Lys Arg Thr His
20 25

<210> 147
<211> 25
<212> PRT
<213> Homo sapiens

<400> 147
His Ile Cys His Ile Gln Gly Cys Gly Lys Val Tyr Gly Asp Arg Ser
1 5 10 15
His Leu Thr Arg His Leu Arg Trp His
20 25

<210> 148
<211> 23
<212> PRT
<213> Homo sapiens

<400> 148
Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Asp Ser Ser Lys Leu
1 5 10 15
Ser Arg His Ile Lys Thr His
20

<210> 149
<211> 25
<212> PRT
<213> Homo sapiens

<400> 149
Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Asp Ser Ser
1 5 10 15
Asn Leu Thr Arg His Ile Arg Ile His
20 25

<210> 150
<211> 25
<212> PRT
<213> Homo sapiens

<400> 150
His Ile Cys His Ile Gln Gly Cys Gly Lys Val Tyr Gly Asp Arg Ser
1 5 10 15
Ser Leu Thr Arg His Leu Arg Trp His

20 25

<210> 151
<211> 23
<212> PRT
<213> Homo sapiens

<400> 151
Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe Asn His Ser Ser Asn Phe
1 5 10 15
Asn Lys His His Arg Ile His
20

<210> 152
<211> 23
<212> PRT
<213> Homo sapiens

<400> 152
Phe Lys Cys Pro Val Cys Gly Lys Ala Phe Arg His Ser Ser Ser Leu
1 5 10 15
Val Arg His Gln Arg Thr His
20

<210> 153
<211> 24
<212> PRT
<213> Homo sapiens

<400> 153
Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Ile Ser Ser Asn Leu
1 5 10 15
Gln Arg His Val Arg Asn Ile His
20

<210> 154
<211> 23
<212> PRT
<213> Homo sapiens

<400> 154
Tyr Gly Cys His Leu Cys Gly Lys Ala Phe Ser Lys Ser Ser Asn Leu
1 5 10 15
Arg Arg His Glu Met Ile His
20

<210> 155
<211> 23
<212> PRT
<213> Homo sapiens

<400> 155
Tyr Lys Cys Lys Glu Cys Gly Gln Ala Phe Arg Gln Arg Ala His Leu
1 5 10 15
Ile Arg His His Lys Leu His
20

<210> 156
<211> 23
<212> PRT
<213> Homo sapiens

<400> 156
Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe Asn Leu
 1   5   10   15
Arg Arg His Glu Arg Thr His
            20

<210> 157
<211> 23
<212> PRT
<213> Homo sapiens

<400> 157
Phe Gln Cys Asn Gln Cys Gly Ala Ser Phe Thr Gln Lys Gly Asn Leu
 1   5   10   15
Leu Arg His Ile Lys Leu His
            20

<210> 158
<211> 23
<212> PRT
<213> Drosophila melanogaster

<400> 158
Tyr Thr Cys Ser Tyr Cys Gly Lys Ser Phe Thr Gln Ser Asn Thr Leu
 1   5   10   15
Lys Gln His Thr Arg Ile His
            20

<210> 159
<211> 23
<212> PRT
<213> Homo sapiens

<400> 159
Tyr Val Cys Arg Glu Cys Gly Arg Gly Phe Arg Gln His Ser His Leu
 1   5   10   15
Val Arg His Lys Arg Thr His
            20

<210> 160
<211> 23
<212> PRT
<213> Homo sapiens

<400> 160
Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu
 1   5   10   15
Asn Val His Lys Arg Thr His
            20

<210> 161
<211> 23

<212> PRT
<213> Homo sapiens

<400> 161
Tyr Met Cys Ser Glu Cys Gly Arg Gly Phe Ser Gln Lys Ser Asn Leu
 1   5   10   15
Ile Ile His Gln Arg Thr His
            20

<210> 162
<211> 23
<212> PRT
<213> Homo sapiens

<400> 162
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
 1   5   10   15
Thr Lys His Lys Lys Ile His
            20

<210> 163
<211> 23
<212> PRT
<213> Homo sapiens

<400> 163
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Asn Gln Ser Ser Thr Leu
 1   5   10   15
Thr Arg His Lys Ile Val His
            20

<210> 164
<211> 23
<212> PRT
<213> Homo sapiens

<400> 164
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
 1   5   10   15
Thr Arg His Arg Arg Ile His
            20

<210> 165
<211> 24
<212> PRT
<213> Homo sapiens

<400> 165
Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu
 1   5   10   15
Thr Arg His Met Lys Lys Ser His
            20

<210> 166
<211> 25
<212> PRT
<213> Homo sapiens

<400> 166
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
 1   5   10   15
Lys Leu Asn Arg His Lys Lys Arg His
            20   25

<210> 167
<211> 23
<212> PRT
<213> Homo sapiens

<400> 167
Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp Asn Leu
 1   5   10   15
Thr Gln His Ile Lys Thr His
            20

<210> 168
<211> 23
<212> PRT
<213> Homo sapiens

<400> 168
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Ser Pro Ala Asp Leu
 1   5   10   15
Thr Arg His Ile Arg Thr His
            20

<210> 169
<211> 23
<212> PRT
<213> Homo sapiens

<400> 169
Tyr Glu Cys Lys Glu Cys Gly Lys Ala Phe Ser Ser Gly Ser Asn Phe
 1   5   10   15
Thr Arg His Gln Arg Ile His
            20

<210> 170
<211> 23
<212> PRT
<213> Homo sapiens

<400> 170
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Thr His Ile Asp Leu
 1   5   10   15
Ile Arg His Ile Arg Thr His
            20

<210> 171
<211> 23
<212> PRT
<213> Homo sapiens

<400> 171

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu
1 5 10 15
Asn Val His Arg Arg Ile His
20

<210> 172
<211> 23
<212> PRT
<213> Homo sapiens

<400> 172
Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu
1 5 10 15
Ile Arg His Gln Arg Ile His
20

<210> 173
<211> 23
<212> PRT
<213> Homo sapiens

<400> 173
Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu
1 5 10 15
Arg Arg His Gly Arg Thr His
20

<210> 174
<211> 23
<212> PRT
<213> Homo sapiens

<400> 174
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Ser Gly Asn Leu
1 5 10 15
Arg Val His Ile Arg Thr His
20

<210> 175
<211> 23
<212> PRT
<213> Homo sapiens

<400> 175
Tyr Ala Cys His Leu Cys Gly Lys Ala Phe Thr Gln Cys Ser His Leu
1 5 10 15
Arg Arg His Glu Lys Thr His
20

<210> 176
<211> 23
<212> PRT
<213> Homo sapiens

<400> 176
Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu
1 5 10 15

Thr Thr His Lys Ile Ile His
20

<210> 177
<211> 23
<212> PRT
<213> Homo sapiens

<400> 177
Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 178
<211> 23
<212> PRT
<213> Homo sapiens

<400> 178
Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu
1 5 10 15
Thr Val His Gln Lys Ile His
20

<210> 179
<211> 23
<212> PRT
<213> Homo sapiens

<400> 179
Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 180
<211> 23
<212> PRT
<213> Homo sapiens

<400> 180
Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu
1 5 10 15
Thr Gln His Arg Arg Ile His
20

<210> 181
<211> 25
<212> PRT
<213> Homo sapiens

<400> 181
Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp
1 5 10 15
Glu Leu Asn Arg His Lys Lys Arg His
20 25

<210> 182
<211> 23
<212> PRT
<213> Homo sapiens

<400> 182
Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu
1 5 10 15
Lys Thr His Thr Arg Thr His
20

<210> 183
<211> 23
<212> PRT
<213> Homo sapiens

<400> 183
Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu
1 5 10 15
Thr Arg His Gln Arg Ile His
20

<210> 184
<211> 23
<212> PRT
<213> Homo sapiens

<400> 184
Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu
1 5 10 15
Ile Arg His Gln Arg Thr His
20

<210> 185
<211> 22
<212> PRT
<213> Drosophila melanogaster

<400> 185
Phe His Cys Gly Tyr Cys Glu Lys Ser Phe Ser Val Lys Asp Tyr Leu
1 5 10 15
Thr Lys Ile Arg Thr His
20

<210> 186
<211> 23
<212> PRT
<213> Homo sapiens

<400> 186
Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu
1 5 10 15
Arg Arg His Glu Thr Thr His
20

<210> 187

<211> 23
<212> PRT
<213> Homo sapiens

<400> 187
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Pro Gly Ala Leu
 1   5   10   15
Val Arg His Ile Arg Thr His
            20

<210> 188
<211> 23
<212> PRT
<213> Homo sapiens

<400> 188
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Pro Gly His Leu
 1   5   10   15
Val Arg His Ile Arg Thr His
            20

<210> 189
<211> 23
<212> PRT
<213> Homo sapiens

<400> 189
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Pro Gly Asn Leu
 1   5   10   15
Lys Arg His Ile Arg Thr His
            20

<210> 190
<211> 23
<212> PRT
<213> Homo sapiens

<400> 190
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Cys Arg Asp Leu
 1   5   10   15
Ala Arg His Ile Arg Thr His
            20

<210> 191
<211> 25
<212> PRT
<213> Homo sapiens

<400> 191
Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Met Ser His
 1   5   10   15
His Leu Lys Glu His Ile Arg Thr His
            20   25

<210> 192
<211> 23
<212> PRT

<213> Homo sapiens

<400> 192
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Gln Gln Ala Ser Leu
1 5 10 15
Asn Ala His Ile Arg Thr His
20

<210> 193
<211> 23
<212> PRT
<213> Homo sapiens

<400> 193
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Gln Ser Gly Asp Leu
1 5 10 15
Arg Arg His Ile Arg Thr His
20

<210> 194
<211> 23
<212> PRT
<213> Homo sapiens

<400> 194
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Gln Ser Ser Asp Leu
1 5 10 15
Val Arg His Ile Arg Thr His
20

<210> 195
<211> 23
<212> PRT
<213> Homo sapiens

<400> 195
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Gln Arg Gly Thr Leu
1 5 10 15
Thr Arg His Ile Arg Thr His
20

<210> 196
<211> 23
<212> PRT
<213> Homo sapiens

<400> 196
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp Thr Leu
1 5 10 15
Ser Asn His Ile Arg Thr His
20

<210> 197
<211> 23
<212> PRT
<213> Homo sapiens

<400> 197
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Thr Ala Asp Lys Leu
1 5 10 15
Ser Arg His Ile Arg Thr His
20

<210> 198
<211> 23
<212> PRT
<213> Homo sapiens

<400> 198
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Thr Ser Gly Asn Leu
1 5 10 15
Val Arg His Ile Arg Thr His
20

<210> 199
<211> 23
<212> PRT
<213> Homo sapiens

<400> 199
Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Thr His Ile Asp Leu
1 5 10 15
Ile Arg His Ile Arg Thr His
20

<210> 200
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 200
ngggavggg 9

<210> 201
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 201
ggkngggag 9

<210> 202
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 202
ngggrantt 9

<210> 203
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 203
gaangggct 9

<210> 204
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 204
gtdaaggav 9

<210> 205
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 205
ghgnggkgg 9

<210> 206
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 206
hgaaaggaa 9

<210> 207
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 207
nggghggaw 9

<210> 208
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 208
hgangggya 9

<210> 209
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 209
gaangggya 9

<210> 210

<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 210
ggggaghga 9

<210> 211
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 211
hgagyagagg ag 12

<210> 212
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 212
graacagagg ag 12

<210> 213
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 213
hgaacagagg ag 12

<210> 214
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 214
katgtdaacg td 12

<210> 215
<211> 12
<212> DNA

<213> Artificial Sequence

<220>
<223> target sequence

<400> 215
gcagtdgaat gt 12

<210> 216
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 216
ggcgyahgaa ac 12

<210> 217
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 217
aaghgaaagg tg 12

<210> 218
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 218
aachgahgan gg 12

<210> 219
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 219
hgahgangg 9

<210> 220
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(9)
<223> n = A,T,C or G

<400> 220
hgahgangg 9

<210> 221
<211> 210
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 221

Met	Gly	Lys	Pro	Ile	Pro	Asn	Pro	Leu	Leu	Gly	Leu	Asn	Ser	Thr	Gln
1				5				10					15		
Ala	Met	Gly	Ala	Pro	Pro	Lys	Lys	Lys	Arg	Lys	Val	Gly	Ile	Arg	Ile
			20					25					30		
Pro	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Asp	His	Cys	Gly	Lys	Ser	Phe	Ser
		35					40					45			
Gln	Ser	Ser	His	Leu	Asn	Val	His	Lys	Arg	Thr	His	Thr	Gly	Glu	Lys
	50					55					60				
Pro	Tyr	Lys	Cys	His	Gln	Cys	Gly	Lys	Ala	Phe	Ile	Gln	Ser	Phe	Asn
65					70					75					80
Leu	Arg	Arg	His	Glu	Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys
				85					90					95	
Met	Glu	Cys	Gly	Lys	Ala	Phe	Asn	Arg	Arg	Ser	His	Leu	Thr	Arg	His
			100					105					110		
Gln	Arg	Ile	His	Ala	Ala	Ala	Ala	Asn	Ser	Ala	Ser	Ser	Ser	Thr	Lys
		115					120					125			
Leu	Asp	Asp	Asp	Leu	Gly	Thr	Ala	Ala	Ala	Val	Leu	Ser	Asn	Met	Arg
	130					135					140				
Ser	Ser	Pro	Tyr	Arg	Thr	His	Asp	Lys	Pro	Ile	Ser	Asn	Val	Asn	Asp
145					150					155					160
Met	Asn	Asn	Thr	Asn	Ala	Leu	Gly	Val	Pro	Ala	Ser	Arg	Pro	His	Ser
				165					170					175	
Ser	Ser	Phe	Pro	Ser	Lys	Gly	Val	Leu	Arg	Pro	Ile	Leu	Leu	Arg	Ile
			180					185					190		
His	Asn	Ser	Glu	Gln	Gln	Pro	Ile	Phe	Glu	Ser	Asn	Asn	Ser	Thr	Ala
		195					200					205			
Cys	Ile														
	210														

<210> 222

<211> 238
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 222
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1   5   10   15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20   25   30
Pro Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser
        35   40   45
Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
    50   55   60
Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn
65   70   75   80
Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys
                85   90   95
Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His
            100   105   110
Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly
        115   120   125
Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His
    130   135   140
Ala Ala Ala Ala Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp
145   150   155   160
Leu Gly Thr Ala Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr
                165   170   175
Arg Thr His Asp Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr
            180   185   190
Asn Ala Leu Gly Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro
        195   200   205
Ser Lys Gly Val Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu
    210   215   220
Gln Gln Pro Ile Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
225   230   235

<210> 223
<211> 238
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 223
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1   5   10   15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20   25   30
Pro Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser
        35   40   45
Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
    50   55   60
Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn

65 70 75 80
Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys
85 90 95
Arg Ile Cys Met Arg Asn Phe Ser Gln Arg Gly Thr Leu Thr Arg His
100 105 110
Ile Arg Thr His Thr Gly Glu Lys Pro Tyr Val Cys Arg Glu Cys Gly
115 120 125
Arg Gly Phe Arg Gln His Ser His Leu Val Arg His Lys Arg Thr His
130 135 140
Ala Ala Ala Ala Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp
145 150 155 160
Leu Gly Thr Ala Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr
165 170 175
Arg Thr His Asp Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr
180 185 190
Asn Ala Leu Gly Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro
195 200 205
Ser Lys Gly Val Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu
210 215 220
Gln Gln Pro Ile Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
225 230 235

<210> 224
<211> 238
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 224
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
1 5 10 15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
20 25 30
Pro Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser
35 40 45
Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys
50 55 60
Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn
65 70 75 80
Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys
85 90 95
Arg Ile Cys Met Arg Asn Phe Ser Gln Arg Gly Thr Leu Thr Arg His
100 105 110
Ile Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly
115 120 125
Lys Ser Phe Arg Gln Ser Thr His Leu Thr Gln His Arg Arg Ile His
130 135 140
Ala Ala Ala Ala Asn Ser Ala Ser Ser Ser Thr Lys Leu Asp Asp Asp
145 150 155 160
Leu Gly Thr Ala Ala Ala Val Leu Ser Asn Met Arg Ser Ser Pro Tyr
165 170 175
Arg Thr His Asp Lys Pro Ile Ser Asn Val Asn Asp Met Asn Asn Thr
180 185 190
Asn Ala Leu Gly Val Pro Ala Ser Arg Pro His Ser Ser Ser Phe Pro
195 200 205

```
Ser Lys Gly Val Leu Arg Pro Ile Leu Leu Arg Ile His Asn Ser Glu
    210                 215                 220
Gln Gln Pro Ile Phe Glu Ser Asn Asn Ser Thr Ala Cys Ile
225                 230                 235

<210> 225
<211> 274
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 225
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1               5                  10                  15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20                  25                  30
Pro Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser
        35                  40                  45
Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys
    50                  55                  60
Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Asp Ser Gly Asn
65                  70                  75                  80
Leu Arg Val His Ile Arg Thr His Thr Gly Glu Lys Pro Tyr Thr Cys
                85                  90                  95
Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His
            100                 105                 110
Glu Thr Thr His Thr Gly Glu Lys Pro Phe His Cys Gly Tyr Cys Glu
        115                 120                 125
Lys Ser Phe Ser Val Lys Asp Tyr Leu Thr Lys Ile Arg Thr His Ala
    130                 135                 140
Ala Ala Ala Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser Leu
145                 150                 155                 160
Ser Phe Thr Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr Thr
                165                 170                 175
Gln Thr Asn Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn Val
            180                 185                 190
His Asp Asn Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp
        195                 200                 205
Gly Asn Asn Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala
    210                 215                 220
Tyr Asn Ala Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr Met
225                 230                 235                 240
Asp Asp Val Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn
                245                 250                 255
Pro Lys Lys Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr
            260                 265                 270
Ala Ser


<210> 226
<211> 277
<212> PRT
<213> Artificial Sequence

<220>
```

<223> plasmid sequence

<400> 226

```
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1               5                  10                  15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20                  25                  30
Pro Gly Glu Lys Pro Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg
        35                  40                  45
Phe Ser Met Ser His His Leu Lys Glu His Ile Arg Thr His Thr Gly
    50                  55                  60
Glu Lys Pro Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Gln Lys
65                  70                  75                  80
Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr
                85                  90                  95
Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg
            100                 105                 110
Arg His Glu Thr Thr His Thr Gly Glu Lys Pro Phe Gln Cys Arg Ile
        115                 120                 125
Cys Met Arg Asn Phe Ser Gln Ser Gly Asp Leu Arg Arg His Ile Arg
    130                 135                 140
Thr His Ala Ala Ala Ala Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp
145                 150                 155                 160
Ser Ser Leu Ser Phe Thr Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu
                165                 170                 175
Ile Thr Thr Gln Thr Asn Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser
            180                 185                 190
Ser Asn Val His Asp Asn Phe Met Asn Asn Glu Ile Thr Ala Ser Lys
        195                 200                 205
Ile Asp Asp Gly Asn Asn Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp
    210                 215                 220
Gln Thr Ala Tyr Asn Ala Phe Gly Ile Thr Thr Gly Met Phe Asn Thr
225                 230                 235                 240
Thr Thr Met Asp Asp Val Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr
                245                 250                 255
Pro Pro Asn Pro Lys Lys Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val
            260                 265                 270
Pro Asp Tyr Ala Ser
        275
```

<210> 227
<211> 275
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 227

```
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1               5                  10                  15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20                  25                  30
Pro Gly Glu Lys Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser
        35                  40                  45
Asp Ser Gly Asn Leu Arg Val His Ile Arg Thr His Thr Gly Glu Lys
    50                  55                  60
```

```
Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His
65                  70                  75                  80
Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys
                85                  90                  95
Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His
            100                 105                 110
Gln Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Arg Ile Cys Met
        115                 120                 125
Arg Asn Phe Ser Asp Pro Gly His Leu Val Arg His Ile Arg Thr His
    130                 135                 140
Ala Ala Ala Ala Asn Phe Asn Gln Ser Gly Asn Ile Ala Asp Ser Ser
145                 150                 155                 160
Leu Ser Phe Thr Phe Thr Asn Ser Ser Asn Gly Pro Asn Leu Ile Thr
                165                 170                 175
Thr Gln Thr Asn Ser Gln Ala Leu Ser Gln Pro Ile Ala Ser Ser Asn
            180                 185                 190
Val His Asp Asn Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp
        195                 200                 205
Asp Gly Asn Asn Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr
    210                 215                 220
Ala Tyr Asn Ala Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Thr
225                 230                 235                 240
Met Asp Asp Val Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro
                245                 250                 255
Asn Pro Lys Lys Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp
            260                 265                 270
Tyr Ala Ser
        275

<210> 228
<211> 158
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 228
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
 1               5                  10                  15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
            20                  25                  30
Pro Gly Glu Lys Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser
        35                  40                  45
Asp Pro Gly Ala Leu Val Arg His Ile Arg Thr His Thr Gly Glu Lys
    50                  55                  60
Pro Phe Gln Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp Thr
65                  70                  75                  80
Leu Ser Asn His Ile Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys
                85                  90                  95
His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His Leu Thr Gln His
            100                 105                 110
Arg Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Arg Ile Cys Met
        115                 120                 125
Arg Asn Phe Ser Arg Ser Asp Thr Leu Ser Asn His Ile Arg Thr His
    130                 135                 140
Ala Ala Ala Ala Arg Gly Met His Leu Glu Gly Arg Ile Met
```

145 150 155

<210> 229
<211> 158
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 229
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
1 5 10 15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
20 25 30
Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser
35 40 45
Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
50 55 60
Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His
65 70 75 80
Leu Thr Gln His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys
85 90 95
Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His
100 105 110
Lys Ile Ile His Thr Gly Glu Lys Pro Phe Gln Cys Arg Ile Cys Met
115 120 125
Arg Asn Phe Ser Asp Ser Gly Asn Leu Arg Val His Ile Arg Thr His
130 135 140
Ala Ala Ala Ala Arg Gly Met His Leu Glu Gly Arg Ile Met
145 150 155

<210> 230
<211> 130
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 230
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
1 5 10 15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
20 25 30
Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser
35 40 45
Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
50 55 60
Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe Arg Gln Ser Thr His
65 70 75 80
Leu Thr Gln His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys
85 90 95
Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His
100 105 110
Lys Ile Ile His Ala Ala Ala Ala Arg Gly Met His Leu Glu Gly Arg
115 120 125

Ile Met
130

<210> 231
<211> 130
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 231
Met Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asn Ser Thr Gln
1 5 10 15
Ala Met Gly Ala Pro Pro Lys Lys Lys Arg Lys Val Gly Ile Arg Ile
20 25 30
Pro Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser
35 40 45
Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys
50 55 60
Pro Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His
65 70 75 80
Leu Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys
85 90 95
Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val His
100 105 110
Lys Arg Thr His Ala Ala Ala Ala Arg Gly Met His Leu Glu Gly Arg
115 120 125
Ile Met
130

<210> 232
<211> 152
<212> PRT
<213> Saccharomyces cerevisiae

<400> 232
Met Trp Phe Pro Gln Ile Ile Ala Gly Met Ala Ala Gly Gly Ala Ala
1 5 10 15
Ser Ala Met Thr Pro Gly Lys Val Leu Phe Thr Asn Ala Leu Gly Leu
20 25 30
Gly Cys Ser Arg Ser Arg Gly Leu Phe Leu Glu Met Phe Gly Thr Ala
35 40 45
Val Leu Cys Leu Thr Val Leu Met Thr Ala Val Glu Lys Arg Glu Thr
50 55 60
Asn Phe Met Ala Ala Leu Pro Ile Gly Ile Ser Leu Phe Met Ala His
65 70 75 80
Met Ala Leu Thr Gly Tyr Thr Gly Thr Gly Val Asn Pro Ala Arg Ser
85 90 95
Leu Gly Ala Ala Val Ala Ala Arg Tyr Phe Pro His Tyr His Trp Ile
100 105 110
Tyr Trp Ile Ser Pro Leu Leu Gly Ala Phe Leu Ala Trp Ser Val Trp
115 120 125
Gln Leu Leu Gln Ile Leu Asp Tyr Thr Thr Tyr Val Asn Ala Glu Lys
130 135 140
Ala Ala Gly Gln Lys Lys Glu Asp
145 150

<210> 233
<211> 273
<212> PRT
<213> Candida albicans

<400> 233
Met Val Ala Glu Ser Ser Ser Ile Asp Asn Thr Pro Asn Asp Val Glu
1 5 10 15
Ala Gln Arg Pro Val Tyr Glu Pro Lys Tyr Asp Asp Ser Val Asn Val
20 25 30
Ser Pro Leu Lys Asn His Met Ile Ala Phe Leu Gly Glu Phe Phe Gly
35 40 45
Thr Phe Ile Phe Leu Trp Val Ala Phe Val Ile Ala Gln Ile Ala Asn
50 55 60
Gln Asp Pro Thr Ile Pro Asp Lys Gly Ser Asp Pro Met Gln Leu Ile
65 70 75 80
Met Ile Ser Phe Gly Phe Gly Phe Gly Val Met Met Gly Val Phe Met
85 90 95
Phe Phe Arg Val Ser Gly Gly Asn Leu Asn Pro Ala Val Thr Leu Thr
100 105 110
Leu Val Leu Ala Gln Ala Val Pro Pro Ile Arg Gly Leu Phe Met Met
115 120 125
Val Ala Gln Met Ile Ala Gly Met Ala Ala Ala Gly Ala Ala Ser Ala
130 135 140
Met Thr Pro Gly Pro Ile Ala Phe Thr Asn Gly Leu Gly Gly Gly Ala
145 150 155 160
Ser Lys Ala Arg Gly Val Phe Leu Glu Ala Phe Gly Thr Cys Ile Leu
165 170 175
Cys Leu Thr Val Leu Met Met Ala Val Glu Lys Ser Arg Ala Thr Phe
180 185 190
Met Ala Pro Phe Val Ile Gly Ile Ser Leu Phe Leu Gly His Leu Ile
195 200 205
Cys Val Tyr Tyr Thr Gly Ala Gly Leu Asn Pro Ala Arg Ser Phe Gly
210 215 220
Pro Cys Val Ala Ala Arg Ser Phe Pro Val Tyr His Trp Ile Tyr Trp
225 230 235 240
Val Gly Pro Ile Leu Gly Ser Val Ile Ala Phe Ala Ile Trp Lys Ile
245 250 255
Phe Lys Ile Leu Lys Tyr Glu Thr Cys Asn Pro Gly Gln Asp Ser Asp
260 265 270
Ala

<210> 234
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> recognition element

<400> 234
ggggcwrgag gg 12

<210> 235
<211> 12

<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 235
gctgranggg ah 12

<210> 236
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 236
gacaaccggt catcgataag ctaattctca c 31

<210> 237
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 237
ttgtccatgg acgctgtttc ctggtgaaa 29

<210> 238
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 238
daadaaaath ga 12

<210> 239
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(13)
<223> n = A,T,C or G

<400> 239
gyagrahgan ggk 13

<210> 240
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 240
hgaaathgag gt 12

<210> 241
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 241
gragragggg ra 12

<210> 242
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 242
grahganggg tc 12

<210> 243
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 243
gragragggh ga 12

<210> 244
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 244
gavgaaaath ga 12

<210> 245
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 245
ngggyagraa at 12

<210> 246
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(13)
<223> n = A,T,C or G

<400> 246
gaagrahgan ggk 13

<210> 247
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 247
gradaanggg tc 12

<210> 248
<211> 12
<212> DNA
<213> Artificial Sequence

<220>

<223> target sequence

<221> misc_feature
<222> (1)...(12)
<223> n = A,T,C or G

<400> 248
ggtngggtcg ya 12

<210> 249
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> target sequence

<400> 249
daagaaaacg ct 12

<210> 250
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 250
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
1 5 10 15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 251
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6,8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 251
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
 1   5   10   15
Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 252
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 252
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Ser Asn
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 253
<211> 94
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11, 33, 45, 67, 79
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17, 51, 85
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6,8-10, 12, 14, 18, 21-25, 27-32, 34, 36-40, 42-44, 46, 48, 52, 55-59, 61-66, 68, 70-74, 76-78, 80, 82, 86, 89-93
<223> Xaa = any amino acid

<400> 253
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Ser Asn
1 5 10 15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
20 25 30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
35 40 45
Ser Asn Xaa Xaa Lys His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
50 55 60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65 70 75 80
Cys Xaa Ser Asn Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
85 90

<210> 254
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10,12,14,18, 21-25
<223> Xaa = any amino acid

<400> 254
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
1 5 10 15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 255
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 255
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa Thr His
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 256
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 256
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Val Xaa Ser Thr
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 257
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17
<223> Xaa = hydrophobic residue

<221> VARIANT

<222> 2-6, 8-10, 12, 14, 18, 21-25
<223> Xaa = any amino acid

<400> 257
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
            20   25

<210> 258
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> purified polypeptide

<221> VARIANT
<222> 11, 33, 45, 67, 79,101, 113
<223> Xaa = Phe or Tyr

<221> VARIANT
<222> 17, 51, 85, 119
<223> Xaa = hydrophobic residue

<221> VARIANT
<222> 2-6, 8-10, 12, 14, 18, 21-25, 27-32, 34, 36-40, 42-44, 46,
       48, 52, 55-59, 61-66, 68, 70-74, 76-78, 80, 82, 86, 89-93,
95-100,102,104-108, 110-112, 114, 116, 120, 123-127
<223> Xaa = any amino acid

<400> 258
Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Arg Xaa Asp Lys
 1   5   10   15
Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa Xaa Xaa
            20   25   30
Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Gln Xaa
        35   40   45
Thr His Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa Xaa Xaa
    50   55   60
Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa
65   70   75   80
Val Xaa Ser Thr Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His Xaa Xaa
                85   90   95
Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa
            100   105   110
Xaa Xaa Arg Xaa Asp Lys Xaa Xaa Arg His Xaa Xaa Xaa Xaa Xaa His
        115   120   125

<210> 259
<211> 630
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(627)

<400> 259

```
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa       48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
 1               5                  10                  15

aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg ttc cag       96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln
            20                  25                  30

tgt aaa act tgt cag cga aag ttc tcc cgg tcc gac cac ctg aag acc      144
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
         35                  40                  45

cac acc agg act cat acc ggg gaa aaa ccg tat gtt tgc tca aaa tgt      192
His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys
     50                  55                  60

ggg aaa gcc ttc act cag agt tca aat ctg act gta cat caa aaa atc      240
Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile
 65                  70                  75                  80

cac acc ggg gaa aaa ccg tat gag tgt cac gat tgc gga aag tcc ttt      288
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
                85                  90                  95

agg cag agc acc cac ctc act cgg cac cgg agg atc cac acc ggg gaa      336
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
            100                 105                 110

aaa ccg tat aag tgt cat caa tgt ggg aaa gcc ttt att caa tcc ttt      384
Lys Pro Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe
        115                 120                 125

aac ctt cga aga cat gag aga act cac acc ggt gaa aaa gcg gcc gct      432
Asn Leu Arg Arg His Glu Arg Thr His Thr Gly Glu Lys Ala Ala Ala
    130                 135                 140

aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg ctc ttt act cgg      480
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145                 150                 155                 160

gac gag tgg aag aag ctg gat ctg tct cag aga agc ctg tac cgt gag      528
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
                165                 170                 175

gtg atg ctg gag aat tac agc aac ctg gcc tcc atg gca gga ttc ctg      576
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
            180                 185                 190

ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa gga gag gat ccc      624
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
        195                 200                 205
```

tgg taa 630
Trp

<210> 260
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> plasmid sequence

<400> 260
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
1 5 10 15
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Phe Gln
20 25 30
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
35 40 45
His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys
50 55 60
Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile
65 70 75 80
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
85 90 95
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
100 105 110
Lys Pro Tyr Lys Cys His Gln Cys Gly Lys Ala Phe Ile Gln Ser Phe
115 120 125
Asn Leu Arg Arg His Glu Arg Thr His Thr Gly Glu Lys Ala Ala Ala
130 135 140
Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg
145 150 155 160
Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu
165 170 175
Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu
180 185 190
Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro
195 200 205
Trp

<210> 261
<211> 546
<212> DNA
<213> Artificial Sequence

<220>
<223> plasmid sequence

<221> CDS
<222> (1)...(543)

<400> 261
atg gtg tac ccc tac gac gtg ccc gac tac gcc gaa ttg cct cca aaa 48
Met Val Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Glu Leu Pro Pro Lys
1 5 10 15

```
aag aag aga aag gta ggg atc cga att ccc ggg gaa aaa ccg tat gag        96
Lys Lys Arg Lys Val Gly Ile Arg Ile Pro Gly Glu Lys Pro Tyr Glu
            20                  25                  30

tgt gat cac tgt gga aaa tcc ttt agc cag agc tct cat ctg aat gtg       144
Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu Asn Val
        35                  40                  45

cac aaa aga act cac acc ggg gaa aaa ccg tat aag tgc cct gat tgt       192
His Lys Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys
    50                  55                  60

ggg aag agt ttt agt cag agt tcc agc ctc att cgc cac cag cgg aca       240
Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr
65                  70                  75                  80

cac acc ggg gaa aaa ccg tat gag tgt cac gat tgc gga aag tcc ttt       288
His Thr Gly Glu Lys Pro Tyr Glu Cys His Asp Cys Gly Lys Ser Phe
                85                  90                  95

agg cag agc acc cac ctc act cgg cac cgg agg atc cac acc ggt gaa       336
Arg Gln Ser Thr His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu
            100                 105                 110

aaa gcg gcc gct aaa ttc gtg tca gtg aca ttt gaa gat gtg gct gtg       384
Lys Ala Ala Ala Lys Phe Val Ser Val Thr Phe Glu Asp Val Ala Val
        115                 120                 125

ctc ttt act cgg gac gag tgg aag aag ctg gat ctg tct cag aga agc       432
Leu Phe Thr Arg Asp Glu Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser
    130                 135                 140

ctg tac cgt gag gtg atg ctg gag aat tac agc aac ctg gcc tcc atg       480
Leu Tyr Arg Glu Val Met Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met
145                 150                 155                 160

gca gga ttc ctg ttt acc aaa cca aag gtg atc tcc ctg ttg cag caa       528
Ala Gly Phe Leu Phe Thr Lys Pro Lys Val Ile Ser Leu Leu Gln Gln
                165                 170                 175

gga gag gat ccc tgg taa                                              546
Gly Glu Asp Pro Trp
            180
```